PATENT 7404

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.	:	09/412,792	Confirmation No.:	1113
Applicant	:	Connelly, Jay H.		
Filed	:	October 5, 1999		
TC/A.U.	:	2617		
Examiner	:	Sheleheda, James R.		
Docket No.	:	42390.P7404		

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

SIR:

DECLARATION UNDER 37 C.F.R. §1.131

1. I, the undersigned, am the inventor for the Patent Application (hereinafter "the Application") identified above.

2. On or before June 17, 1999, I conceived of the invention set forth in the Application.

3. On June 21, 1999, my employer received from me an Invention Disclosure describing the invention set forth in the Application, as evidenced by Exhibit A.

4. I have reviewed the subject matter of currently pending claims 1, 3-14, and 18-30 of the Application.

5. The Invention Disclosure fully supports the subject matter of currently pending claims 1, 3-14, and 18-30 of the Application.

6. My employer approved the preparation and filing of the Application.

7. My employer engaged the law firm of Fish & Richardson P.C. to prepare and file the Application.

8. On or about September 15, 1999, I received a first draft of the Application from Fish & Richardson.

9. On or about September 27, 1999, I received a final draft of the Application along with a Declaration and an Assignment from Fish & Richardson. On September 28, 1999, I executed the Declaration.

10. The Application was filed in the United States Patent Office by Express Mail on October 5, 1999, constructively reducing the invention to practice.

11. I hereby declare that all declarations made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Jay H. Connelly

4/24/06
Date

EXHIBIT A

INTEL CONFIDENTIAL

INTEL INVENTION DISCLOSURE

LEGAL ID# 11928 IAL Comm / IAL / BTL DATE: 12/19/97

It is important to provide accurate and detailed information on this form. The information will be used to evaluate your invention for possible filing as a patent application. When completed, please return this form to the **Legal Department at JF3-147.** If you have any questions, please call **264-0444 or 264-0998.**

1. Inventor: Connelly (Last Name) Jay (First Name) H (Middle Initial)
   SS# 542-84-1605 WWID 10068580 Phone ~~645-4484~~ 264-9684 M/S: JF2-86
   Home Address: 3148 nw 126th place City Portland State or Zip 97229
   Citizenship: US BUM Presenter: Ali Sarabi
   Group: (e.g. TMG, ICG, CEG) NBG Division Name IAL Subdivision BTL
   Supervisor: Ali Sarabi WWID 10022210 Phone 264-8397 M/S: JF2-86, JF1-84

(PROVIDE SAME INFORMATION AS ABOVE FOR EACH ADDITIONAL INVENTOR)

2. Title of Invention: A mechanism to support ~~heterogeneous~~ HETEROGENEOUS data over a broadcast pipe.

3. What technology/product/process (code name) does it relate to: Digital Broadcast

4. Stage of development (i.e. % complete) 15

RECEIVED
JUN 21 1999
PATENT DATABASE GROUP
INTEL LEGAL TEAM

5. (a) Has a description of your invention been, or will it shortly be, published outside Intel:
   NO: X YES: _____ DATE WAS OR WILL BE PUBLISHED: _____
   If YES, was the manuscript submitted for pre-publication approval? YES: _____ NO: _____

   (b) Has your invention been used/sold or planned to be used/sold by Intel or others?
   NO: _____ YES: X DATE WAS OR WILL BE SOLD: Q499

   (c) Does this invention relate to technology that is or will be covered by a SIG (special interest group)/standard/ or specification?
   NO: X YES: _____ Name of SIG/Standard/Specification: _____

   (d) If the invention is a semiconductor device, actual or anticipated date of tapeout? _____

   (e) If the invention is software, actual or anticipated date of any beta tests. 2/00

6. Was the invention conceived or constructed in collaboration with anyone other than an Intel blue badge employee or in performance of a project involving entities other than Intel, e.g. government, other companies, universities or consortia?
   NO: X YES: _____ Name of individual or entity: _____

Please attach a page to this form, DATED AND SIGNED BY AT LEAST ONE PERSON WHO IS NOT A NAMED INVENTOR, to provide a description of the invention, and include the following information:

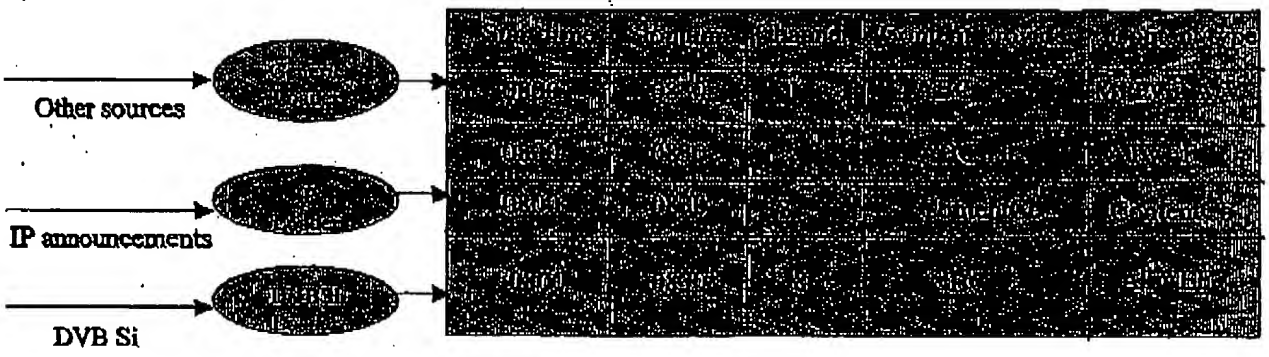
Describe in detail how the invention works

The purpose of this invention is to allow a client platform (PC, set top box ...etc,.) in a broadcast system to interpret broadcast signals consisting of a mix of hetrogeneous data signals such as audio, video as well as multipe types of data. This invention provides a mechanism which allows content providers or bandwidth providers to register applications designed to interpret specific data signals and also provides the ability to dynamically specify the type of content being sent.. It also allows the client system to determine the appropriate application to decode and display broadcast content based on parameters such as the type and format of data, the content provider and the channel it is received on.

Step 1: Announce relevant description of broadcast data

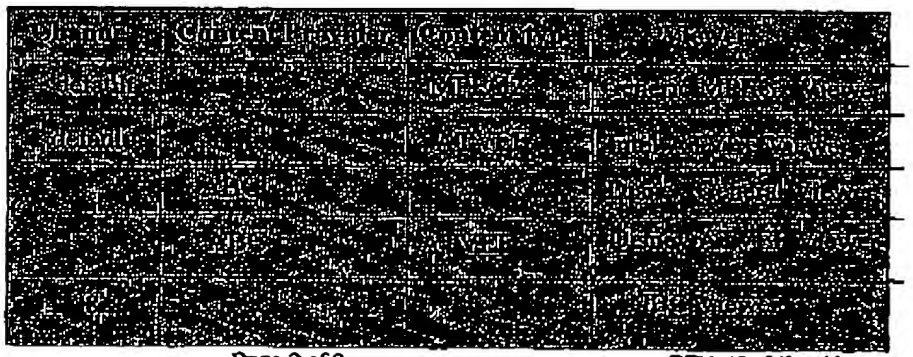
In order to select the most appropriate application with which to view the logical channel, specific attributes about the type of data to be broadcast (for example: format of the data, content provider, content type ...) are announced ahead of time. This information is persisted on the client system via some sort of data store and is used later for processing and recall. The announcements may come from a variety of sources (sucvh as IP streams, DVBSI, PSIP ...etc.,

For example, consider the following table populated by announcements:



Step 2: Configure the viewers present on the system

Applications are allowed to register with the client system for presentation of received data. This can be done independently from the announcements and can be done manually (with user intervention) or automatically, via special announcements. The applications can be installed via standard media such as CD-Rom or can be installed over the wire.



This registration creates a mapping between an application and a set of properties (such as channel, content type, content provider...etc,) that the application is interested in. For example, Disney could register a client application to be used for interpretting video + data received from Disney. Any time the user selects a channel with video+data from Disney, this registered application would be called on to process the streams.

Default options are supported for all fields. This allows applications to essentially "wild card" various fields. In all cases, the most specific tuple match wins. In case that multiple tuples match the same number of fields, each field will be assigned a priority and the tuple with the highest cumulative priority wins.
Operational Scenario:

Step 3: Apply mapping logic as user surfs:

Assume the following:

Channel 1 contains traditional ABC programming
Channel 2 contains ABC video+data programming in ATVEF form
Channel 3 contains Quokka motor sports immersion data

When the user turns the TV on, assume it is tuned to channel 1. The system consults the database to determine that at this time, channel 1 carries legacy audio/video in MPEG2 format from ABC. The user has a generic MPEG2 viewer registered as the default for MPEG2 audio/video streams (they have not yet purchased the new ABC MPEG2 viewer which has differentiated features from the standard viewer). The system launches the generic viewer (or potentially already has it in memory). The generic viewer is pointed to the incoming streams from channel 1 and the content is displayed.

Now the user hits channel up. The system interprets this signal, consults the data base and determines that this is ABC video+data in ATVEF format. The user has downloaded the Disney ATVEF viewer from their web page and it has registered for this type of content. The system passes control to the Disney ATVEF viewer assumes control of the output device and decodes/presents the data from the streams associated with channel 2.

Now, the user selects channel 3. The ContentCo viewer has registered to decode this type of content so it is launched. In this case, the content consists of proprietary telemetry data for a series of cars combined with audio/video feeds from select cars. It would not possible for a generic application to decode and present this experience since ContentCo has obtained the exclusive rights for the streaming data. The sytem now passes control to the ContentCo viewer application and the application consults the data base to determine which streams are available as well as what those streams correspond to.

Describe advantages of your invention over what is done now

Supports broadcast of a wide variety of content and data types. The current broadcast paradigm consists primarily of linear content in a mostly homogeneous form. In general, a single application (Television Viewer) can display content from any and all channels. While this is convenient for the client system, it limits innovation and creativity on the part of a content provider. For example, the current system provides only the ability to express content in terms of audio and video. If one includes the concept of digital intercast, the content providers can also express themselves using a combination of audio, video and HTML but the application must be known ahead of time.

A mechanism must exist which allows content providers to choose their own medium of expression. Additionally, this mechanism must provide the ability for new content types to emerge over time and must provide the ability for content providers to differentiate their brands using branded viewers.

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Allows content providers to express themselves in any medium they see fit. The current broadcast paradigm restricts content providers to expressing themselves only in the form of a linear audio/video experience. The advent of intercast (and ATVEF) will allow content providers to now express themselves in the form of audio/video + HTML (and possibly Java).. Our experience with content providers has indicated that they want to be free to choose the medium for their expression and several (such as Nickelodeon and Launch) have determined that neither linear A/V nor HTML+Java are

sufficient. More to the point, we expect new mechanisms for expression to emerge over the coming years and content providers must be free to use these mechanisms (even if they were not known at time of system creation). In the new system, content providers are free to choose any mechanism they like to express their content (e.g. Nickelodeon chose visual basic and Launch chose Macromedia).

Provides a mechanism to allow new applications and content types to emerge without prerequisite knowledge of what these may be. For example, a content provider can contract with a bandwidth provider to produce and distribute a totally new kind of experience (perhaps a simulation of a space shuttle launch combined with A/V streams beamed down from the shuttle). This content provider creates a viewer application that combines the telemetry data from the space shuttle with the MPEG2 encoded A/V streams received from space. This viewer is distributed to users (either gas pumped down a broadband pipe, downloaded from the web, retail channels ...). The bandwidth provider agrees to distribute this content from 5-7 each night on channel 425. During that time, any user who has access to the branded shuttle application can tune to channel 425 (again – either through EPG or channel surfing) and they can see the simulation plus the audio video in exactly the same manner as the content provider wanted them to. Note that without this invention, a single viewer would have to be capable of providing this experience. In the new system, many types of experience can be provided and they can dynamically change over time.

Provides a mechanism to support branded applications. Our experience with content providers indicates that they want to control the complete "edge-to-edge" experience that the user has. More to the point, they want this experience to be associated with their brand. In the current paradigm, content providers are restricted to using a generic viewer application (either a standard TV viewer, Intercast viewer or some other predetermined viewer). In the new paradigm, content providers can make available branded viewers which can be used to differentiate their broadcast offering from other offerings. These viewers can provide special e-commerce opportunities, previews of the content, special advertising features ...etc. By allowing content providers to brand applications, we encourage (and allow reward for) innovation in this area.

Include at least one figure illustrating the invention. If the invention relates to software, include a flowchart or pseudo-code representation of the algorithm.

<see above>

Value of your invention to Intel (how will it be used?).

This invention will allow Intel to produce and market a set of technology which encourages innovation in the broadcast space. It will provide clear value add for a programmable device (versus a set top) and will encourage technology churn over a broadcast pipe. IAL will create this technology and license it to service providers who want to add value to their broadcast service.

Additionally, it will protect the right of the PC to participate in an expanding market (Broadcast)

Identify the closest or most pertinent prior art that you are aware of.

None.

Who is likely to want to use this invention or infringe the patent if one is obtained and how would infringement be detected?

Microsoft is the most likely company to devise similar techniques. Identifying infringement may be possible by watching the press releases for new products and may be evident in systems that allow multiple content to be sent over a broadcast stream. It may also require inspection of client software and architecture.

***HAVE YOUR SUPERVISOR READ, DATE AND SIGN COMPLETED FORM**

DATE: 6/17/99 SUPERVISOR: _____

BY THIS SIGNING, I (SUPERVISOR) ACKNOWLEDGE THAT I HAVE READ AND UNDERSTAND THIS DISCLOSURE, AND RECOMMEND THAT THE HONORARIUM BE PAID